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10/564,568	04/13/2006	Sergey Nikolaevich Zheltov	042390.P16120	9632
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INTEL/BSTZ			EXAMINER	
BLAKELY SOKOLOFF TAYLOR & ZAFMAN LLP			BRYANT, DOUGLAS J.	
1279 OAKMEAD PARKWAY				
SUNNYVALE, CA 94085-4040			ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/564,568

Applicant(s)

ZHELTOV ET AL.

Examiner

DOUGLAS BRYANT

Art Unit

2195

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2006.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-48 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 13 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/IC)
Paper No(s)/Mail Date 05/02/2006, 04/09/2006
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-48 are pending. This is the initial response to application 10/564568 filed on April 13, 2006.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- a. The following claim language are not clearly understood:
 - i. Claim 1, lines 1-2, it is not clearly indicated if each execution unit (EU) has an associated performance monitoring unit (PMU) or if it is shared with the other EU. Claim 1, lines 3-4, it is not clearly indicated what the EU is requesting; examiner suggests amending to "receiving a request from an execution unit to monitor". Claim 1, line 5, it is not clearly indicated what the sequence is, is the sequence based on where the requests originated from which EU? or is the sequence the order of the start and stop request? Claim 1, line 5, it is clearly indicated what a "correct sequence" is, it the sequence the time the request came in? or the start and stop time of the PMU? Claim 1, line 7, it is not clearly indicated as to what basics the arbitration is being done. Since the requests

already have been put in the correct sequence, why is arbitration needed? If arbitration is needed, what basis is for determining who gain the exclusive execution. Is the request start time, request sequence, request EU or is it something else? Claim 1, line 9, it is not clearly indicated as to how a request is being allocated, is it after winning the arbitration step? Claim 1, line 10, it is not clearly indicated as to how the system is determining a number of allocated request, is the number of request from each EU? or the number of request of the EU that has to be monitored?

- ii. Claim 2, line 3, it is uncertain as to why additional request are ignored, is it because the request is a duplicate? or was the request out of sequence?
 - iii. Claim 9, it is not clearly indicated what is meant by in addition to collecting performance data of other execution units, is the same performance monitoring unit collecting data from multiple Execution units?
 - iv. Claim 12, it is uncertain as to why the performance monitoring unit stop collecting because of a predetermined scheduled time slot or if it stops because it reached the end of the sequence?
 - v. Claims 17 and 33 has similar deficiencies as claim 1.
 - vi. Claims 18 and 34 has similar deficiencies as claim 2.
 - vii. Claims 28 and 44 has similar deficiencies as claim 12.
- b. The following terms lacks antecedent basis:
- viii. Claim 9 – the performance monitoring unit
 - ix. Claim 17 – machine accessible medium

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 17- 48 Are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

5. As per claim 17, it is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims are directed to a signal directly or indirectly by claiming a medium and the Specification on page 6, lines 33-line 7 of page 7 of the specification recites evidence where the machine readable medium is define as a “wave” (such as a carrier wave). In that event, the claims are directed to a form of energy which at present the office feels does not fall into a category of invention. The following link on the World Wide Web is for the United States Patent And Trademark Office (USPTO) policy on 35 U.S.C. §101.

6. As per claim 33, it is recited in the preamble “system”, but the body of the claim is logic which is appearing to be comprised of software alone without claiming associated computer hardware required for execution. In the specification page 6, lines 10-11, states that the logic could be software and since under 101, a machine is defined as a physical device or a combination of devices having functionalities to effect an action or a result, and the software is not physical devices or objects. Thus, the claim only recites software per se (descriptive material covered in MPEP 2106.01), which constitute as non-statutory subject matter.

7. Claims 18- 32 and 34-48 are rejected for the same reasons above for they do not cure the deficiency of 101 issues from their parent claim.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cyran (Cyran) US Patent 7,149,636 in view of Dabell (Dabell) US Patent 6,621,862 B1.

10. As per claim 1, Cyran teaches in a system that shares performance monitoring units between multiple execution units, a method comprising:

receiving a request from an execution unit to at least one of start and stop performance monitoring operation (Col 2, lines 31-34);

maintaining a correct sequence of requests to start and stop performance monitoring operation (Col 6, lines 65-66; calling sequence is the start/stop);

allocating a request to start performance monitoring operation (Col 7, lines 10-11; recompiled, re-linked to target system means it was allocated);

initiating performance monitoring operation (Col 7, lines 54-55; issuing a run command is sending a start signal);

determining an active mode of performance monitoring operation (**Col 7, lines 17-18; MR is multifunction real-time mode, if it is real-time then it is active**)
removing a request to start performance monitoring operation (**Col 7, lines 51-52; start and stop signals are profiled functions**);
completing performance monitoring operation (**Col 8, lines 20-21**)

11. Cyran is silent to the teaching of performing arbitration to acquire exclusive execution for one of a plurality of request initiators and determining a number of allocated requests to start performance monitoring operation.

12. However, Dabell teaches performing arbitration to acquire exclusive execution for one of a plurality of request initiators (**Col 5, lines 16-22**);

determining a number of allocated requests to start performance monitoring operation (**Col 5, line 18-19; coefficient number of request is determining the number of request; Col 5, lines 21-22; if it is only one request it is granted, it is understood that it had to determine if it was one or more**);

13. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the teachings of Dabell into the teachings of Cyran to determine the number of allocated request to start performance monitoring and to determine which one of the plurality of the request initiators would acquire exclusive execution rights. This modification would have been obvious because one of ordinary skill in the art would want these

functionalities to ensure that the performance measurements in any computer system are efficient.

14. As per claim 2, Cyran teaches the method of claim 1, wherein maintaining the correct sequence of requests comprises ensuring that the stop request follows the start request for the same execution unit (**Col 4, lines 21-22; the stop and start request are in sequence {see fig. 1C}**) and

additional requests are ignored (**Col 4, lines 21-22; it is understood that if the stop and start request are maintain in a correct sequence, that all additional request are ignored until the stop request is executed**).

15. As per claim 3, Cyran teaches the method of claim 1, wherein allocating the request comprises indicating to the system that a request to start performance monitoring operation is pending for a specific execution unit (**Col 7, lines 10-11; it understood that when allocating a request for performance monitoring it is for a specific unit that is can fulfill the request**).

16. As per claim 4, Cyran teaches the method of claim 1, wherein allocating the request and initiating of performance monitoring operation are performed if a request to start performance monitoring operation was received (**Col 7, lines 10-11, Col 7, lines 54-55; it's understood that in order to allocate and initialize an performance operation, a request was received**).

17. As per claim 5, Cyran teaches the method of claim 1, wherein removing the request comprises indicating to the system that no request to start performance monitoring operation is pending for the current execution unit (**Col 4, lines 21-22; it is understood that in order for the correct sequence of start/stop to be maintained, that if the request to stop is pending before a start request that the stop will be removed because the current execution unit will not stop if it has not received a start request**) .

18. As per claim 6, Cyran teaches the method of claim 1, wherein removing the request, determining active mode, and completing of performance monitoring operation are performed if a request to stop performance monitoring operation was received (**Col 4, lines 44-50; it is understood that when the stop request is sent, it has finish collecting the data it requested and is no longer active and therefore the request to start performance monitoring will be removed**).

19. As per claim 7, Cyran teaches the method of claim 1, wherein initiating performance monitoring operation comprises programming the performance monitoring unit to start collecting performance data for the execution unit that requested said operation if no other request was previously allocated (**Col 6, lines 27-32; it is understood that the PMU is collecting performance data for any execution the user elect and if the user elects only one EU then there are no other requests**).

20. As per claim 8, Cyran teaches the method of claim 7, further comprising *at least one of* setting an initial performance value to the current value of performance monitoring unit counter and setting the initial performance value and the performance monitoring unit counter to a predefined value **(Col 7, lines 64-67)**.

21. As per claim 9, Cyran teaches the method of claim 1, wherein initiating performance monitoring operation further comprises programming the performance monitoring unit to start collecting performance data for the execution unit that requested said operation **(Col 2, lines 31-33; it is understood that the PMU is collecting performance data for the EU the user elected)**,

in addition to collecting performance data of other execution units which previously requested said operation if there is other requests previously allocated **(Col 6, lines 30-32)**.

22. As per claim 10, Cyran teaches the method of claim 1, wherein determining the active mode of performance monitoring operation comprises detecting whether programming of performance monitoring unit was performed for the execution unit that requested to stop performance monitoring operation **(Col 7, lines 23-28)**

23. As per claim 11, Cyran teaches the method of claim 1, wherein completing performance monitoring operation comprises

retrieving final performance data (Col 2, lines 34-36; when sending a stop signal to **terminate monitoring, the performance data collected at that time is the final performance data**). and

programming the performance monitoring unit to stop collecting of performance data if no other requests for the performance monitoring unit are allocated (Col 7, lines 51-51; **if user removes functions from list then there are no other requests for the performance monitoring unit, which is programming the PMU to stop collecting**).

24. As per claim 12, Cyran teaches the method of claim 1, wherein completing performance monitoring operation further comprises programming the performance monitoring unit to stop

collecting of performance data for the execution unit that requested said operation (Col 7, lines 23-24; **if the user select the functions not to measure, then it programs the PMU to stop collecting data**),

if there are other requests previously allocated (Col 6, lines 27-32; **the user would determine if the other requests allocated by electing to enable or disable EU are previously allocated**) and

the performance monitoring unit was in active mode for the execution (Col 7, line 25)

25. As per claim 13, Cyran teaches the method of claim 12, further comprising retrieving current performance data, setting the initial performance value equal to the value retrieved or reprogramming the performance monitoring unit to start counting from a predefined value and setting the initial performance value equal to the predefined value (Col 7, lines 64-67).

26. As per claim 14, Cyran teaches the method of claim 12, further comprising:
selecting another execution unit **(Col 6, lines 27-28);**
programming the performance monitoring unit to start collecting performance data for the selected execution unit **(Col 2, lines 31-33).**
27. As per claim 15, Cyran teaches the method of claim 14, wherein selecting another execution unit comprises selecting, by external means **(user electing is external means)**, of a request previously allocated by another execution unit **(Col 6, lines 30-32)** and determining the execution unit that allocated said request **(Col 6, lines 27-28; the user electing an EU is how it determines the EU to collect the data for).**
28. As per claim 16, Cyran teaches the method of claim 14, wherein programming the performance monitoring unit further comprises enabling performance data collection for the selected execution unit **(Col 2, lines 31-33; it is understood that the PMU is collecting performance data for the EU the user elected) ,**
in addition to performance data of other execution units which previously requested said operation **(Col 6, lines 30-32).**
29. As per claims 17 and 33, they are rejected on the same rationale as claim 1.

30. As per claim 18 and 34, they are rejected on the same rationale as claim 2.
31. As per claim 19 and 35, they are rejected on the same rationale as claim 3.
32. As per claims 20 and 36, they are rejected on the same rationale as claim 4.
33. As per claim 21 and 37, they are rejected on the same rationale as claim 5.
34. As per claim 22 and 38, they are rejected on the same rationale as claim 6.
35. As per claims 23 and 39, they are rejected on the same rationale as claim 7.
36. As per claim 25 and 41, they are rejected on the same rationale as claim 9.
37. As per claim 26 and 42, they are rejected on the same rationale as claim 10.
38. As per claims 27 and 43, they are rejected on the same rationale as claim 11.
39. As per claim 28 and 44, they are rejected on the same rationale as claim 12.
40. As per claim 29 and 45, they are rejected on the same rationale as claim 13.

41. As per claim 30 and 46, they are rejected on the same rationale as claim 14.

42. As per claim 31 and 47, they are rejected on the same rationale as claim 15.

43. As per claim 32 and 48, they are rejected on the same rationale as claim 16.

Conclusion

44. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DOUGLAS BRYANT whose telephone number is (571)270-7707. The examiner can normally be reached on M-F 8:00-5:00pm Est.

45. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, An Meng-ai can be reached on 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

46. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

47. If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/564,568
Art Unit: 2195

Page 14

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